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Relations among Contextual Silent Reading Fluency, Non-Contextual Silent Reading Fluency, and Reading Comprehension: A Path Analysis of fifth-Grade Readers

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Abstract

The aim of this research was to assess Turkish students' contextual and non-contextual silent reading fluency skills and their relations with reading comprehension. With this aim, the study used correlational survey design and the study sample consisted of total 389 fifth-grade Turkish elementary students studying in elementary schools. The schools were located in middle socioeconomic status and the students' families had middle socioeconomic level. The informed consent letters obtained from all the students before the study began. For assessment process, the appropriate grade level texts were chosen and the students' silent fluency skills were measured at first in the elementary schools, provided by the school principals. After this process, the reading comprehension tests related to the grade level texts read was administered to all the students. The data obtained from testing process were analyzed and the findings were presented in respond to research aims. According to these results, the conclusions were drawn and some recommendations fitted with the results and conclusions were made for future research

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1. Introduction

Reading is a complex performance that requires simultaneous coordination among many tasks (as cited in Fuchs, Fuchs, Hosp, & Jenkins, 2001). That is, reading involves the understanding of a complex and difficult concept by interpreting written language and making sense of it. In other words, it is a process of constructing meaning from a written text as a result of thinking with the guidance of the existing text (Rosenblatt, 2004). As identified, skilled reading is the ability to extend meaning from text accurately and effectively. Becoming good reader requires both the ability to recognize words and the ability to comprehend text. Although instruction for word recognition is critical process for students, some students continue to struggle with derive meaning or acquiring knowledge from

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text in spite of possessing sufficient word recognition skills. Additionally, these students experience greater difficulty in upper elementary grades seeing attention switch from learning to read to read to learn. Particularly, the students encounter problems about finding main idea, making predictions, using background knowledge, making connections, creating mind images, asking questions, drawing inferences, and summarizing information (Gersten, Fuchs, Williams, & Baker, 2001; William, 2005).

There is accumulating research shows that there are underlying skills of proficient reading which need to be taught to students and lead to increase in children's reading performance at school. These reading skills are stated as phonemic awareness, reading comprehension, vocabulary, reading strategies and reading fluency skills. Particularly, oral reading fluency is gaining new recognition as an important part of school programs and for students with reading difficulties (Hudson, Lane, & Pullen, 2005).

Oral reading fluency is widely used to carefully watch students' reading performance in the early elementary grades due to its strong empirical relations with reading comprehension. Most research reveals that there is a robust and significant relationship between reading comprehension and oral reading fluency in different grade levels (e.g., Good, Simmons, & Kame'enui, 2001; Rasinski, Samuels, Hiebert, Petscher, & Feller, 2011; Rasinski, Padak, McKeon, Krug-Wilfong, Friedauer, & Heim, 2005; Rasinski, Rikli, & Johnston, 2009).

However, given the literature about reading comprehension and fluency skills, few studies have empirically examined relations between silent reading fluency and reading comprehension and these studies have merely focused on contextual silent reading fluency, and non-contextual silent reading fluency and its relation with reading comprehension has been neglected (e.g., Berninger et al., 2010; Denton et al., 2011; Fuchs et al., 2001; Kim, Wagner, & Foster, 2011; Price, Meisinger, Louwerse, & D'Mello, 2012; Yildirim & Kasim, 2012) since oral reading fluency draws more attention to monitoring students' reading progress in early elementary grades levels (Ridel, 2007). We would say that there is not enough research giving consideration to silent reading fluency skills and their relations with reading comprehension. It may be resulted that difficulty in measuring of silent reading fluency accurately may be one explanation for lack of research about silent reading fluency compared with oral reading fluency that can be assessed easily. Another reason is that the lack of consideration given to silent reading fluency may result from the assumption that silent reading fluency may develop naturally from oral reading fluency (Fuchs et al., 2001; Hiebert, Wilson, & Trainin, 2010). In addition, standardized tests such as Dynamic Indicators of Basic Essential Literacy Skills used widely focus on oral reading tasks (Hiebert, Samuels, & Rasinski, 2012) and also this situation may decrease consideration to silent reading fluency. Given the information above, we would say that more researches need to be done to make clear relations among silent reading fluency skills and reading comprehension.

Therefore, this study attempted to provide more information by investigating silent reading fluency skills and their relations with reading comprehension. With this overall aim of the present study, we specifically addressed the following research questions:

1. What is the relation between reading comprehension and contextual silent reading fluency?
2. What is the relation between reading comprehension and non-contextual silent reading fluency?
3. What is the relation between contextual and non-contextual silent reading fluency skills?
4. To what extend unique variance in reading comprehension is explained by measures of silent reading fluency skills?

2. Method

2.1 Subjects

This research took place in spring semester, 2012, in Turkey's Kirsehir province. A total of 399 fifth-grade students from three public elementary schools participated in the study. The subjects were relatively homogeneous and of middle socio-economic status. They ranged in age from 11 through 12 years.

2.2. Instrumentation

2.2.1. Reading comprehension test

We used three different kinds of comprehension tests for measuring reading comprehension levels of the fifth-grade students as the indicators of the reading comprehension. These are cloze, sentence verification technique, and question-answer. The texts in the comprehension tests were chosen from fifth-grade Turkish language arts course textbooks and their readability levels (fifth-grader) were confirmed by RoTMoNE (2005).

2.2.2. Silent reading fluency

Two kinds of measures were used to assess silent reading fluency skills of the students. For silent reading fluency, we looked for similar measurements tools in the reading literature utilized for assessing silent reading fluency of students. Test of Silent Contextual Reading Fluency (TOSCRF) is the one of them. During the administration of this test, the words in a text are printed in uppercase, spaces and punctuations between words are omitted. Then, students are allowed 3 minutes to draw lines between boundaries of words when they read the text silently (Traylor, Price, & Meisinger, 2011).

2.2.2.1. Contextual silent reading fluency

It was given a text to students and asked them to draw lines separating words with no spaces and punctuations, and printed in uppercase in three minutes when they read silently. The scoring practices of the students' contextual silent reading fluency skill consisted of counting the words the students identified correctly in 3 minutes through the text attempted.

2.2.2.2. Non-contextual silent reading fluency

The students were presented a text with unrelated words without spaces and punctuations, and printed in uppercase. Then, it was asked students to draw lines by separating unrelated words in three minutes. The score was the number of words identified in there minutes

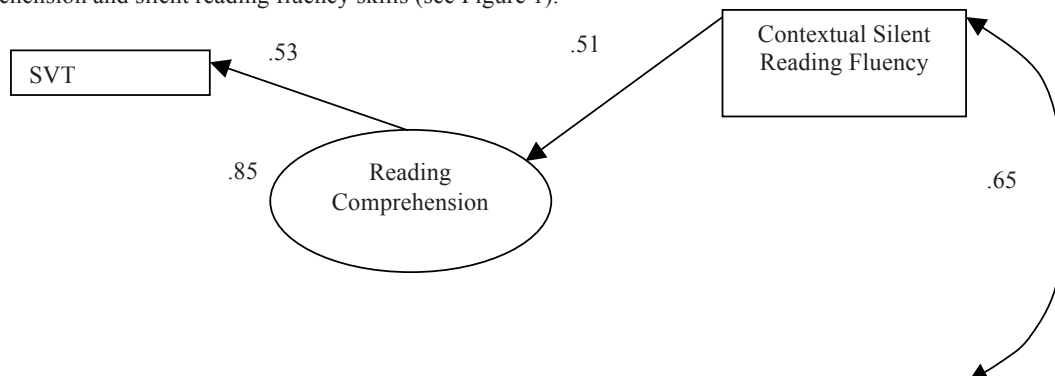
2.3. Procedure

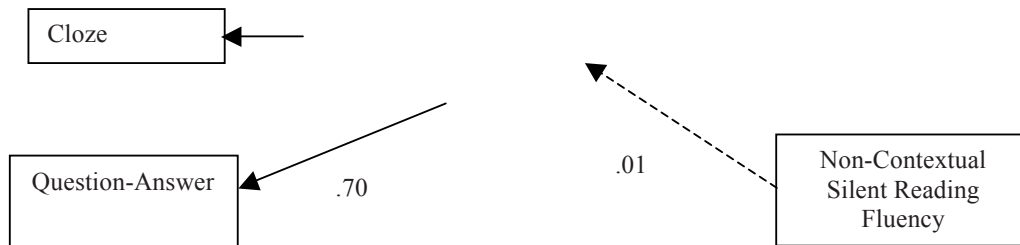
The reading comprehension tests administered to students at first and then the texts arranged for assessing contextual and non-contextual silent reading fluency skills of the students were given to the students.

3. Findings

Revealing Relations among Reading Comprehension and Contextual and Non-Contextual silent Reading Fluency skills:

Structural equation model analysis technique was used to figure out the relationship among reading comprehension and silent reading fluency skills (see Figure 1).





Note. SVT= Sentence verification technique for measuring children's comprehension levels. Solid lines represent statistically significant paths and dotted line represents statistically nonsignificant path. Single-headed arrows represent the impact of one variable on another and double-headed arrow represents correlation between pair of variables.

Figure 1. Standardized structural regression weights among contextual silent reading fluency, non-contextual silent reading fluency and reading comprehension for entire sample ($N= 399$).

For the full sample, the model yielded good fit indices. When reviewed overall model fit summary indices in the structural equation model, the χ^2 test yielded a value of 2.609, which was evaluated with 4 degrees of freedom, had a corresponding p -value of .625. The χ^2/df was .652. Additionally, the RMSA was .000. The TLI was 1.006 and CFI was 1.000. Moreover, SRMR was .014. We would say that all of the indices suggested that the model appeared by the structural equation model analysis was a good fit to the data. The model explained approximately 26% of total variance in reading comprehension. As presented in Figure1, contextual silent reading fluency and non-contextual silent reading fluency highly were highly related to each other ($r = .65$). With both highly correlated predictors in the model, while contextual silent reading fluency made a strong contribution to prediction of reading comprehension ($\beta = .51, p < .001$), non-contextual silent reading fluency did not make a significant contribution to prediction of reading comprehension ($\beta = .01, p > .05$).

4. Conclusion

In the study, we aimed to explore the relationship among contextual silent reading fluency, non-contextual silent reading fluency, and reading comprehension by using structural equation modeling. The research findings revealed that the underlying observed variables of reading comprehension were good indicators. In addition, the standardized path coefficients for regression in the model showed that contextual silent reading fluency was a significant predictor of reading comprehension ($p < .001$), by contrast, non-contextual silent reading fluency was not a significant predictor of reading comprehension ($p > .05$). For the present study, contextual and non-contextual silent reading fluency together explained 26% of the variance in reading comprehension. Also, the overall model fit indexes appeared quite good.

Taken account of the present study findings in respond to the research questions, it would be argued that the present research provides strong insights into the way we relate silent reading fluency skills to reading comprehension using advanced statistical analyses. We hope that the present study will provide an impetus and gateway to more comprehensive silent reading fluency research. In that regard, it would be done more comparative studies regarding silent reading fluency to see its effectiveness on reading comprehension and reading success of students.

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